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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,417	11/21/2003	Geir Ultveit Haugen	135274	3421

7590 01/12/2007  
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EXAMINER
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JAWORSKI, FRANCIS J

ART UNIT	PAPER NUMBER
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3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/719,417	<b>Applicant(s)</b> HAUGEN ET AL.	
	<b>Examiner</b> Jaworski Francis J.	<b>Art Unit</b> 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                 |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                            | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-6-06</u> . | 6) <input type="checkbox"/> Other: _____                                                |

***Claim Objections***

Claims 14 – 21 are objected to because of the following informalities: Base claim 14 contains the typo “broad” for – board --.. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 - 2, 4 –6, 8 – 17, 19 – 29 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipschutz (US5469851) insofar as col. 6 lines 18 – 46 describe a set of receive signal processor boards 30-1...30-8 which control beamforming for the 128 transducer channels, and which boards are coupled to coefficient generators 32 and 34 which each contain a cache memory containing dynamic delay coefficients for the beamformation in association with static receive channels under control of the CPU controller 40. Since each receive aperture is determined by channel groupings there are inherently receive apertures present in association with the respective coefficient generators. Moreover since the coefficient generators 32 and 34 control aggregate focal delay and inclination beam steering during reception per Col. 11 lines 5 - 45 as well as the differential delay associated with parallel beamformation per col. 3 lines 7 – 24 for example, it would appear that either interpretation reads against the ‘directional parameters’ which influence this receive aperture.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipschutz in view of O'Donnell (US4886069) insofar as whereas the former does not indicate that delay increment is in terms of phase shift the patent identifies the latter as representative of phase shift control of additional ancillary receive beam direction.

Claims 7 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Lipschutz as applied to claims above, and further in view of Lockwood et al (US5537367) insofar as the latter evidences that it would have been obvious to form a triangular aperture when using weightings to reduce element numbers for reduced channel operation.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipschutz as applied to claim 22 above, and further in view of Safranek et al (US6922755) insofar as the latter evidences that IEEE-1596 standards are used in the industry to sustain coherency between cache memory operations.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipschutz as applied to claims above, and further in view of Phelps et al (US6875178) which teaches in col. 7 lines 29 – 51 that it would have been obvious to use a test signal to verify processes during channel operations for purposes of signal equalization.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipschutz as applied to claims above, and further in view of Ikeda et al (US4811740) insofar as the latter teaches in col. 1 lines 29 – 46 and details thereafter that probe type information may be stored in a probe-housed memory to ensure that the correct focusing and delays are practiced for the particular probe type.

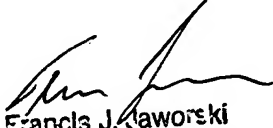
Block (US4809241) is directed to data storage for a sampling window in a cache memory subsequent to beamforming.

Finger (US6417857), Pelissier (US6325759) and Bakircioglu (US6733454) are cited as using cache memories for data transfer purposes within ultrasound imaging systems.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

01-02-07

  
Francis J. Jaworski  
Primary Examiner